

## ABSTRACT OF THE DISCLOSURE

An encoding device converts four-channel or five-channel audio signals to two-channel audio signals, which are then subjected to compression in accordance with the MPEG standard. Matrix coefficients are calculated based on the two-channel audio signals. A decoding device receives the compressed two-channel audio signals together with the matrix coefficient. The compressed two-channel audio signals are expanded and are then subjected to prescribed arithmetic operations using the matrix coefficients. Thus, the decoding device reproduces the original audio signals. The decoding device, which is normally actualized by a digital signal processor (DSP), is noticeably reduced in amounts of calculations and is simplified in circuit configuration because of the elimination of calculations of matrix coefficients therein.